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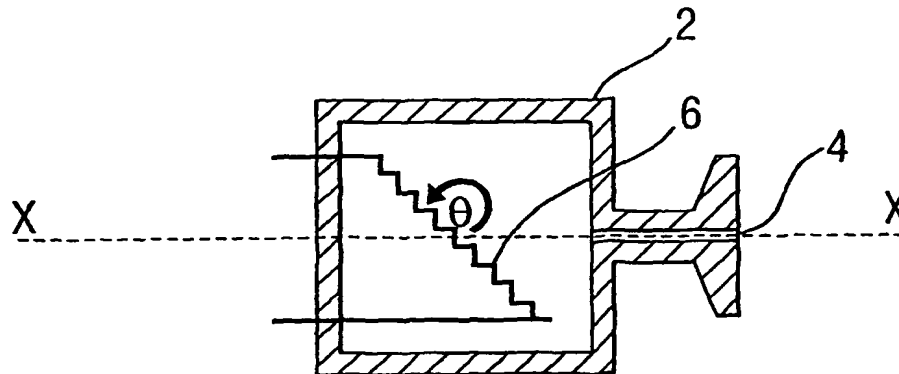
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(54) Title: **VACUUM GAUGE**



(57) Abstract: A thermal conductivity type pressure gauge comprises a gauge head (2) being rotatably mountable in a vessel whose environmental pressure is to be measured and an elongate electrical filament (6) mounted in the gauge head, the gauge head (2) having an inlet wherethrough the electrical filament is exposed to the environmental pressure within the vessel and the filament (6) having directional component lengths in two orthogonal axes, one of the orthogonal axes X-X being parallel to the axis of rotation of the gauge head (2).

INTERNATIONAL SEARCH REPORT

PCT/GB 03/02452

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01L21/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|------------|--|-----------------------|
| X | GB 827 311 A (MINI OF SUPPLY) 3 February 1960 (1960-02-03) the whole document | 1-7,9 |
| A | US 4 729 241 A (SCHUBERT HANS-JOACHIM ET AL) 8 March 1988 (1988-03-08) abstract; figure 1 | 1-9 |
| A | DE 10 94 341 B (CONS ELECTRODYNAMICS CORP) 8 December 1960 (1960-12-08) the whole document | 1-9 |

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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| Patent document cited in search report | | Publication date | Patent family member(s) | | Publication date |
|---|---|---------------------|----------------------------|------------|---------------------|
| GB 827311 | A | 03-02-1960 | NONE | | |
| US 4729241 | A | 08-03-1988 | DE | 3541178 A1 | 27-05-1987 |
| | | | JP | 62129730 A | 12-06-1987 |
| DE 1094341 | B | 08-12-1960 | NONE | | |